

Abstract Selection

Rhinitis medicamentosa: aspects of pathophysiology and treatment. Graf, P. Department of Otorhinolaryngology, Sodersjukhuset, Karolinska Institute, Stockholm, Sweden. *Allergy* (1997), Vol. 52 (40 Suppl), pp. 28–34.

With modern vasoconstrictors, such as oxy- and xylometazoline, the risk of developing rhinitis medicamentosa (RM) has been considered to be small or even nonexistent. However, recent studies have shown that overuse of these drugs may result in rebound congestion, nasal hyperreactivity, tolerance, and histologic changes of the nasal mucosa. Using rhinostereometry, it has also been shown that the long-term use of the preservative benzalkonium chloride (BKC) in oxymetazoline nasal spray accentuates the severity of rhinitis medicamentosa in healthy volunteers. A nasal decongestant spray composed of a combination of vasoactive substances and BKC has a long-term adverse effect on the nasal mucosa. BKC alone induces mucosal swelling after 30 days use of the nasal spray in healthy subjects, unlike placebo. According to the author, rhinitis medicamentosa can be defined as a condition of nasal hyperreactivity, mucosal swelling, and tolerance that is induced, or aggravated, by the overuse of topical vasoconstrictors with or without a preservative. An adequate treatment of these patients consists of a combination of vasoconstrictor withdrawal and a topical corticosteroid to alleviate the withdrawal process. The underlying nasal disorder must then be treated. Patients with rhinitis medicamentosa who overuse topical decongestants and are able to stop using such drugs should be careful about taking these drugs again, even for a few days. They must be informed about the rapid onset of rebound congestion upon repeated use in order to avoid the return of the vicious circle of nose-drop abuse. Author.

Microvascular anatomy of the nose. Widdicombe, J. Sherrington School of Physiology, UMDS, St Thomas' Hospital, London, UK. *Allergy* (1997), Vol. 52 (40 Suppl), pp. 7–11.

The microvasculature of the nose consists of: 1) A dense subepithelial network of capillaries, with fenestrations between the endothelial cells. This network provides nutrients to the epithelium and glands, and allows passage of water into the lumen for evaporation and air-conditioning. 2) A system of capacitance vessels or sinuses, which when they distend, block the nasal lumen, and when they empty, open the nasal passages. Changes in their volume will affect the filtering and air-conditioning functions of the nose. 3) Arteriovenous anastomoses which allow rapid passage of blood through the mucosa. They are probably important in air-conditioning, and in the counter-current mechanisms that tend to keep the brain cool in a hot dry climate. The anatomical interrelationships between these different systems is not well understood, nor is their differential control in terms of actions of mediators and nerves. In neurogenic inflammation sensory nerves are excited and release local mediators such as substance P via axon reflexes. These sensory neuropeptides will cause vasodilatation, vascular congestion and extravasation of liquid from the postcapillary venules, with resultant oedema and exudate. They may also cause secretion from the submucosal glands. Author.

The genetic basis of head and neck carcinoma. Saunders, J. R. Jr. Milton J. Dance, Jr., Head and Neck Rehabilitation Center, Greater Baltimore Medical Center, Maryland, USA. *American Journal of Surgery* (1997) November, Vol. 174 (5), pp. 459–61.

Research over the past few years has pointed to a genetic basis for numerous cancers. Efforts in this regard are ongoing in squamous carcinoma of the head and neck. Today surgeons and residents in training need to stay up to date on molecular biology and the genetic sequences that are necessary to form a malignancy. In addition, these changes offer diagnosticians and therapists novel ways both to diagnose and treat malignancies. An evolution in molecular genetics, tumour virology, and tumour biology has led to

our understanding of how malignancies arise. There are two pathways of cancer production: the activation of an oncogene or the mutation of a tumour suppressor gene. This review discusses the interaction of these genetic changes in the development of squamous carcinoma of the head and neck, their relationship to tobacco and alcohol use, as well as methods to detect the presence of malignancy and novel techniques that may be used to treat malignancies in the future. Author.

Long-term evaluation of bone mass in free fibula flap mandible reconstruction. Disa, J. J., Winters, R. M., Hidalgo, D. A. Plastic and Reconstructive Surgery Service, Memorial Sloan-Kettering Cancer Center, Cornell University School of Medicine, New York, New York, USA. *American Journal of Surgery* (1997) November, Vol. 174 (5), pp. 503–6.

BACKGROUND: Vascularized fibula transfer has become a preferred method of mandibular restoration after oncologic surgical ablation. In order to elucidate the long-term effect on fibular mass after mandibular reconstruction, change in fibular height was utilized as an indirect measure of change in bone mass over time. Other potentially influential factors in long-term bone mass preservation were evaluated; these included site of reconstruction (central, body, ramus), patient age, length of follow-up, adjuvant radiotherapy, and the delayed placement of osseointegrated dental implants. **METHODS:** A retrospective analysis of patients undergoing free fibula mandible reconstruction for oncologic surgical defects between 1987 and 1993 was performed. Post-operative panorex examinations were used to evaluate fibular height and bony union after osteotomy. Fixation hardware was used as a reference to eliminate magnification as a possible source of error in measurement. Only patients with at least 24 months follow-up were included in this study. **RESULTS:** There were 27 patients (15 males and 12 females) with a mean age of 43 years (range 14 to 65) included in this study. Mandibular defects were anterior (16) and lateral (11). There were between two and five segmental osteotomies per patient (excluding the ends of the graft). Thirty per cent of patients had delayed placement of osseointegrated dental implants. Initial panorex examinations were taken between one and nine months (mean two) post-operatively. Follow-up panorex examinations were taken 24 to 104 months (mean 54) post-operatively. The bony union rate after osteotomy was 93 per cent. Comparative measurements of fibular height revealed that central segments underwent a mean decrease in height by four per cent (range 0 per cent to 22 per cent); body segments decreased in height by seven per cent (range 0 per cent to 33 per cent); ramus segments decreased in height by five per cent (range 0 per cent to 15 per cent). In each anatomic segment, fibular height varied by 10 per cent or less when compared with respect to patient age, length of follow-up, adjuvant radiation therapy, and the presence of osseointegrated dental implants. **CONCLUSIONS:** We conclude that the retention of fibula height seen in this study indicates that fibula bone mass is preserved after free flap mandible reconstruction. Furthermore, these findings are not affected by the site of reconstruction, patient age, length of follow-up, adjuvant radiation therapy, or presence of osseointegrated dental implants. This study further supports the efficacy of vascularized fibula grafts for mandible reconstruction. Author.

Tumour angiogenesis as a prognostic factor in laryngeal cancer.

Murray, J. D., Carlson, G. W., McLaughlin, K., Pennington, M., Lynn M., DeRose, P. B., Williams, J. K., Cohen, C. Department of Surgery, Emory University School of Medicine, Atlanta, Georgia, USA. *American Journal of Surgery* (1997) November, Vol. 174 (5), pp. 523–6.

BACKGROUND: Lymph node metastasis is the single greatest predictor of recurrence in laryngeal cancer. Prognostic factors are needed to target patients who may benefit from adjuvant therapy.

Tumour angiogenesis correlates with metastasis in breast, bladder, and oral cavity cancer and may have prognostic value in other tumours. **METHODS:** In order to examine the relationship of tumour angiogenesis to recurrence, 51 patients with squamous cell carcinoma of the larynx were reviewed. In a blinded design, previously sectioned slides were chosen for advanced tumour and highest vessel concentration. Samples were cut and immunocytochemically stained for CD-31 (an endothelial marker). A computer image analyzer quantitated the per cent area of staining. Variables were statistically examined against recurrence. **RESULTS:** Patients were stratified by percent tumour staining. Nodal involvement was seen in nine (36 per cent) patients with tumour staining ≤ 20 per cent and in 20 (77 per cent) with tumour staining > 20 per cent ($p = 0.003$). Patients with ≤ 20 per cent staining and without metastasis had a 13 per cent rate of recurrence whereas patients with > 20 per cent staining and without metastasis had a 67 per cent rate of recurrence ($p = 0.025$). **CONCLUSIONS:** Though nodal status was suggestive of predictability, only angiogenesis is a statistically significant predictor of recurrence in node negative patients ($p = 0.025$). Angiogenesis shows strong correlation with regional recurrence and may be used as an independent prognostic indicator to determine clinically node negative patients who may be at higher risk for metastasis and require adjuvant therapy. Author.

Intraoperative lymphatic mapping for early-stage melanoma of the head and neck. Bostick, P., Essner, R., Sarantou, T., Kelley, M., Glass, E., Foshag, L., Stern, S., Morton, D. Roy E. Coats Research Laboratories of John Wayne Cancer Institute at Saint John's Health Center, Santa Monica, California 90404, USA. *American Journal of Surgery* (1997) November, Vol. 174 (5), pp. 536–9.

BACKGROUND: We previously reported dye-directed intraoperative lymphatic mapping and selective sentinel lymphadenectomy for primary cutaneous melanomas draining to the neck lymph nodes. In this study we determined whether combining the dye with a radiopharmaceutical agent would enhance our rate of sentinel node detection. **METHODS:** 117 patients with primary cutaneous melanomas of the upper chest and head and neck underwent preoperative cutaneous lymphoscintigraphy to confirm lymphatic drainage to neck nodes, followed by intraoperative lymphatic mapping and sentinel lymphadenectomy. In 94 cases, isosulfan blue dye was injected at the primary site; in the remaining 23 cases, a 1:3 mixture of radiopharmaceutical and dye was injected, and a hand-held probe was used to determine the radioactive counts. **RESULTS:** Preoperative cutaneous lymphoscintigraphy identified 129 drainage basins; 12 patients (10 per cent) had dual-basin drainage. During intraoperative lymphatic mapping and sentinel lymphadenectomy, 183 sentinel nodes were identified and excised from 120 basins (1.5 nodes/basin). The blue dye alone identified sentinel nodes in 93 of 101 basins (92 per cent). The probe identified sentinel nodes in 28 of 28 basins, only one of which failed to reveal blue-staining sentinel nodes; thus, the probe plus dye identified sentinel nodes in 27 of 28 basins (96 per cent). Histopathologic analysis revealed metastasis in sentinel nodes from 11 patients (12 per cent) who underwent sentinel lymphadenectomy with blue dye alone and in three patients (13 per cent) who underwent sentinel lymphadenectomy with dye plus probe. There were no same-basin recurrences over a mean follow-up of 46 months (range one to 125). **CONCLUSIONS:** Selective sentinel lymphadenectomy is a highly accurate method of staging the regional nodes in patients with primary tumours of the head and neck. Although we initially demonstrated the utility of this technique with blue dye alone, our results now suggest that the combination of dye and radiopharmaceutical may be a more sensitive method to detect sentinel nodes. Author.

Long-term follow-up of aviators after functional endoscopic sinus surgery for sinus barotrauma. Parsons, D. S., Chambers, D. W., Boyd, E. M. University of Missouri School of Medicine, Columbia 65212, USA. *Aviation, Space and Environment Medicine* (1997) November, Vol. 68 (11).

Prior to endonasal endoscopic advances for the treatment of sinus disease, surgical results for aviators with recurrent sinus barotrauma (RSB) were inconsistent. Between 1988 and 1992, 54 aviators, who were permanently or temporarily grounded, underwent functional endoscopic sinus (FES) surgery in an attempt to return them to active flying status. Follow-up in the immediate

postoperative period revealed that 98 per cent of these aviators returned to active flight duty. A questionnaire was mailed to each of these aviators to compare their preoperative and long-term postoperative symptoms and determine their current flying status. Long-term follow-up time ranged from 20 to 72 mo with average of 48 mo. Of the aviators who responded to the survey, 92 per cent have continued their flying duties and do not report difficulties with RSB. We conclude that FES surgery is effective in the short- and long-term management RSB in aviators. Author.

Anti-emetic drug effects on pilot performance: granisetron vs. ondansetron. Benline, T. A., French, J., Poole, E. Systems Research Laboratories, Dayton, OH, USA. *Aviation, Space and Environment Medicine* (1997) November, Vol. 68 (11), pp. 998–1005.

BACKGROUND: The objectives of this study were to evaluate the effects of two anti-emetic drugs, granisetron (1 mg tablets/2 mg oral dose) and ondansetron (8 mg tablets/8 mg oral dose) on flying and mission performance in an F-16 research simulator. **METHODS:** The experimental approach, involving nine pilots, was a placebo controlled, double blind, crossover design. Each pilot flew three defensive counter air missions. Data on nine measures of flying performance were collected via the simulator data recorder. In addition, ratings on mission and flying performance were recorded by simulator instructor pilots. Data were also collected on symptoms and side effects, mood, and vigilance. **RESULTS:** This study, carried out in the context of a simulated tactical air-to-air combat mission, produced no significant differences between the effects of the target drugs and placebo on any of the nine objective flying performance measures, including a composite measure of landing performance. There were no differences in evaluator ratings of routine mission flying or air combat performance. Pilots could not distinguish active drug from placebo and there were no differences on any of the mood scales. **CONCLUSIONS:** These results confirm our earlier findings that the drugs of interest are well tolerated and produce no cognitive, psychomotor or subjective state changes. In this study, there was no evidence of performance degradation caused by either granisetron or ondansetron when tested in a complex, military task environment. Author.

The pattern of splint usage in the management of two common temporomandibular disorders. Part II: The stabilization splint in the treatment of pain dysfunction syndrome. Davies, S. J., Gray, R. J. Department of Dental Medicine and Surgery, University Dental Hospital of Manchester. *British Dental Journal* (1997) October 11, Vol. 183 (7), pp. 247–51.

OBJECTIVE: To examine whether the stabilization splint is a suitable treatment for pain dysfunction syndrome and to determine the most appropriate pattern of usage. **DESIGN:** Prospective random control clinical trial. **SETTING:** Dental school clinic unit. **SUBJECTS:** 70 patients diagnosed with pain dysfunction syndrome were treated with a stabilization splint for three months. Group 1 (23 patients) wore the splint 24 hours/day. Group 2 (19 patients) wore the splint only during the day. Group 3 (28 patients) wore the splint only at night. **RESULTS:** There was no statistically significant advantage to any pattern of splint usage; all groups showed a marked improvement by subjective and objective assessment. **CONCLUSIONS:** Patients being treated for pain dysfunction syndrome by a stabilization splint need wear the splint only at night. Author.

The pattern of splint usage in the management of two common temporomandibular disorders. Part III: Long-term follow-up in an assessment of splint therapy in the management of disc displacement with reduction and pain dysfunction syndrome. Davies, S. J., Gray, R. J. Department of Dental Medicine and Surgery, University Dental Hospital of Manchester. *British Dental Journal* (1997) October 25, Vol. 183 (8), pp. 279–83.

OBJECTIVE: To assess the long-term follow-up of patients successfully treated for disc displacement with anterior repositioning splint therapy and patients successfully treated for pain dysfunction syndrome with stabilization therapy. **DESIGN:** Retrospective analysis. **SETTING:** Dental school clinic unit. **METHODS:** Maintenance of improvement was assessed by a postal questionnaire or by direct telephone contact three years after cessation of splint treatment. **RESULTS:** 90 per cent of patients successfully treated for disc displacement with reduction

and 88 per cent of patients successfully treated for pain dysfunction reported maintenance of improvement after three years. In both groups the reported improvement was independent of the pattern of splint usage. **CONCLUSIONS:** The short-term use of an appropriate occlusal splint for a specific temporomandibular disorder leads to a long-term resolution of the problem. Author.

Standard and multifrequency tympanometry in normal and otosclerotic ears. Shahnaz, N., Polka, L. McGill University, School of Communication Sciences and Disorders, Montreal, Quebec, Canada. *Ear and Hearing* (1997) August, Vol. 18 (4), pp. 326–41. **OBJECTIVES:** The primary goal of this study was to evaluate alternative tympanometric parameters for distinguishing normal middle ears from ears with otosclerosis. A secondary goal was to provide guidelines and normative data for interpreting multifrequency tympanometry obtained using the Virtual 310 immittance system. **DESIGN:** Nine tympanometric measures were examined in 68 normal ears and 14 ears with surgically confirmed otosclerosis. No subjects in either group had a history of head trauma or otoscopic evidence of eardrum abnormalities. Two parameters, static admittance and tympanometric width, were derived from standard low-frequency tympanometry and two parameters, resonant frequency and frequency corresponding to admittance phase angle of 45 degrees (F45 degrees), were derived from multifrequency tympanometry. **RESULTS:** Differences between normal and otosclerotic ears were statistically significant only for resonant frequency and F45 degrees. Group differences in resonant frequency were larger when estimated using positive tail, rather than negative tail, compensation. Group differences in both resonant frequency and F45 degrees were larger when estimated from sweep frequency (SF), rather than sweep pressure, tympanograms. Test performance analysis and patterns of individual test performance point to two independent signs of otosclerosis in the patient group; 1) an increase in the stiffness of the middle ear, best indexed by F45 degrees derived from SF recordings, and 2) a change in the dynamic response of the tympanic membrane/middle ear system to changes in ear canal pressure, best indexed by tympanometric width. Most patients were correctly identified by only one of these two signs. Thus, optimal test performance was achieved by combining F45 degrees derived from SF recordings and tympanometric width. **CONCLUSIONS:** The findings confirm the advantage of multifrequency tympanometry over standard low-frequency tympanometry in differentiating otosclerotic and normal ears. Recommendations for interpreting resonant frequency and F45 degrees measures obtained using the Virtual Immittance system are also provided. In addition, the relationship among different tympanometric measures suggests a general strategy for combining tympanometric measures to improve the identification of otosclerosis. Author.

Airway management for CO₂ laser surgery on the larynx: Venturi jet ventilation and alternatives. Borland, L. M. University of Pittsburgh School of Medicine, Pennsylvania, USA. *International Anesthesiology Clinic* (1997) Summer, Vol. 35 (3), pp. 99–106. Supralaryngeal Venturi jet ventilation provides superb surgical visualization and access to the larynx, including the anterior and posterior commissure. When VJV is delivered through a metal cannula and laryngoscope or all-metal endotracheal tube or bronchoscope, there is no inorganic combustible material in the surgical field, making supralaryngeal VJV a safe as well as effective technique for CO₂ laser surgery on the airway. Author.

Analyses of neuro-otological complications after radiosurgery for acoustic neuromas. Ito, K., Kurita, H., Sugawara, K., Mizuno, M., Sasaki, T. Department of Otolaryngology, Faculty of Medicine, University of Tokyo, Japan. *International Journal of Radiation, Oncology, Biology and Physiology* (1997) December 1, Vol. 39 (5), pp. 983–8. **PURPOSE:** To find out the optimum treatment parameters and the proper indications for treatment of acoustic neuromas, univariate and multivariate actuarial analyses of neuro-otological complications after stereotactic radiosurgery for acoustic neuromas were performed. **METHODS AND MATERIALS:** The subjects were 46 patients with acoustic neuromas who underwent unilateral radiosurgery between June 1990 and June 1994 and were followed up at the University of Tokyo. Age ranged from 13 to 77 years (median, 54 years). Tumour diameter ranged from

0 to 25 mm (mean, 12 mm) at the cerebellopontine angle and from two to 15 mm (mean, 8.3 mm) in the internal auditory meatus. Maximum tumour doses ranged from 20 to 40 Gy (mean, 31.4 Gy), and peripheral doses from 12 to 25 Gy (mean, 16.8 Gy). One to eight isocenters were used (mean, 3.2). Median follow-up was 39 months. Eight events concerning neuro-otological complications were chosen, and the potential risk factors for them were analyzed by the actuarial analyses (univariate and multivariate). The events examined include hearing loss, vestibular function loss, facial palsy, and trigeminal nerve dysfunction. In order to point out potential risk factors for neuro-otological complications, univariate analyses were performed using both the Wilcoxon test and the log rank test, and multivariate analyses were performed with the Cox proportional hazards model. Variables nominated as potential risk factors were 1) demographic variables such as patients age and sex, 2) tumour dimensions, 3) treatment variables such as tumour doses and number of isocenters, and 4) pretreatment hearing levels. A variable with significant *p*-values (*p*<0.05) in two or more of the three actuarial analyses (two univariate and one multivariate) was considered a possible risk factor. **RESULTS:** The possible variables that increase the risk for each event analyzed were: neurofibromatosis type II (NF2) and the number of isocenters for total hearing loss; experience of prior operation, the tumour diameter in the internal auditory meatus, and NF2 for hearing threshold elevation; peripheral tumour dose for vestibular function loss; patient age or midporus transverse tumour diameter (the two variables were correlated), and the number of isocenters for facial palsy; and the number of isocenters for trigeminal neuropathy. **CONCLUSION:** NF2 and the tumour diameter were the common risk factors for hearing loss in previous studies and ours. For the 5th/7th nerve dysfunction, the tumour diameter was the common risk factor. The risk of using more isocenters remains controversial. The difference in risk factors for hearing impairment and vestibular function loss suggests different mechanisms for the two. Further studies with larger populations and longer follow-up periods are required in order to draw conclusions on the risk factors in radiosurgery. Author.

A comparison of vascularized and nonvascularized bone grafts for reconstruction of mandibular continuity defects. Pogrel, M. A., Podlesh, S., Anthony, J. P., Alexander, J. Department of Oral and Maxillofacial Surgery, University of California, San Francisco 94143-0440, USA. *Journal of Oral Maxillofacial Surgery* (1997) November, Vol. 55 (11), pp. 1200–6.

PURPOSE: This study compared vascularized and nonvascularized bone grafts for the reconstruction of segmental defects of the mandible. **PATIENTS AND METHODS:** The results in 39 patients having vascularized bone grafts (38 fibulas and one iliac crest) and 29 patients having nonvascularized bone grafts (26 iliac crest (22 corticocancellous block grafts, four cancellous bone grafts in a tray) and three rib grafts) for segmental mandibular reconstruction were evaluated in terms of overall success rate, total number of surgeries performed, total blood loss, total number of hospital days, and total number of hours in the operating room. **RESULTS:** Of 39 vascularized bone grafts, two failed (95 per cent success rate), whereas of 29 nonvascularized bone grafts, seven failed (76 per cent success rate). Failure for the nonvascularized bone grafts was closely correlated to the length of the defect. Nonvascularized bone graft patients underwent an average of one more surgical procedure for total reconstruction than vascularized bone graft patients, including osseointegrated implants. However, vascularized bone graft patients spent a mean of over 14 additional days in the hospital for all of their reconstructive procedures and an additional three hours in the operating room as compared with nonvascularized bone graft patients. Blood loss was similar in both groups (1,100 ml). Only 20 to 24 per cent of patients in each treatment group have completed reconstruction to include osseointegrated implants. **CONCLUSIONS:** The success rate for vascularized bone grafting is high and is the treatment of choice when primary reconstruction is required, when the patient has been previously irradiated, or when simultaneous replacement of soft tissue is required. Vascularized bone grafts are also the treatment of choice for mandibular replacements over 9 cm in length. Nonvascularized bone grafts create a better contour and bone volume for facial esthetics and subsequent implant insertion, and may be the treatment of choice for secondary reconstruction of defects less than 9 cm in length. Author.

A combined technique for correction of the prominent ear. Salgarelli, A., Magnato, R., Carminati, R., Nocini, P. F. Department of Maxillo-Facial Surgery, Postgraduate School of Maxillo-facial Surgery, University of Verona, Italy. *Journal of Oral Maxillofacial Surgery* (1997) November, Vol. 55 (11), pp. 1235–41. **PURPOSE:** The literature illustrates a large number of different techniques for the correction of the prominent ear, and the great variety available is indicative of how difficult it is to achieve satisfactory results in all cases. This report describes a procedure for successfully treating such patients. **PATIENTS AND METHODS:** Forty patients were treated with a surgical procedure creating a new anthelical plica based on the Stenstrom and Mustarde method and producing an anatomic cavity in the mastoid region where the concha can be repositioned according to the mastoid region where the concha can be repositioned according to the Furnas method. The tension of the 'cartilage spring', which is a likely cause of relapse, was relieved by dissecting a triangular portion of cartilage from the root of the inferior crus. **RESULTS:** No major complications were observed with this technique and a good esthetic result was achieved in all cases. **CONCLUSIONS:** This surgical technique is suitable for correction of all cases of prominent ear. Author.

Knowledge and attitudes about otitis media risk: implications for prevention. Daly, K. A., Selvius, R. E., Lindgren, B. Otitis Media Research Center, University of Minnesota School of Medicine, Minneapolis, MN 55455, USA. *Pediatrics* (1997) December, Vol. 100 (6), pp. 931–6.

OBJECTIVES: To investigate maternal knowledge and attitudes about otitis media (OM) risk, to estimate the prevalence of risk factors in the first year of life, and to identify barriers to the reduction of risk factors (eg, formula feeding, day care attendance, and exposure to passive smoke). **METHODS:** Questionnaires mailed to a systematic sample of 504 Minnesota women ≥ 18 years old identified through 1994 birth certificates. **RESULTS:** 80 per cent returned a completed survey. According to maternal report, 29 per cent of infants (age eight to 13 months) had recurrent OM (\geq three episodes) and two per cent had tympanostomy tubes. Forty-six per cent attended day care, 29 per cent had \geq one smoking parent, and 49 per cent breastfed for \leq two months. Women were more knowledgeable about OM signs and symptoms than about risk factors. Mean OM knowledge score (the sum of correct true-false responses) was seven

(standard deviation = 1.6). Using multiple linear regression, knowledge score was significantly related to marital status, education, age, area of residence, breastfeeding (months), and number of cigarettes smoked per day by the mother, but not to infant or sibling OM history or day care attendance ($R = 0.23$). Infant history of OM (odds ratio, 1.9; 95 per cent confidence interval, 1.1 to 3.2) and white race (odds ratio, 0.3; 95 per cent confidence interval, 0.1 to 0.8), but not the presence of risk factors, were significantly related to having received clinicians' advice about OM prevention advice. **CONCLUSION:** OM education and prevention programs should target pregnant women and new mothers with OM risk factors, and those who are young, single, and less educated. Author.

Laryngeal manifestations of gastroesophageal reflux before and after treatment with omeprazole. Shaw, G. Y., Searl, J. P. Department of Otolaryngology, University of Kansas Medical Center, Kansas City 66160, USA. *Southern Medical Journal* (1997) November, Vol. 90 (11), pp. 1115–22.

BACKGROUND: Laryngeal manifestations of gastroesophageal reflux disease are thought to be prevalent in our society. In general, diagnosis has been primarily based on symptoms. Historically, additional testing has included laryngoscopy, barium swallow, manometry, and single and double probe pH monitoring. **METHODS:** We assessed 96 patients who had symptoms suggestive of reflux laryngitis. We administered surveys grading their symptoms. All patients had standardized videolaryngostroboscopic evaluation and computerized acoustic analysis. Patients then received a uniform regimen of dietary restrictions and omeprazole (a proton pump inhibitor) for 12 weeks, after which they were retested. **RESULTS:** Using the new laryngoscopic grading system, we found that this regimen produced statistically significant improvement in all symptoms except granulomas. In patients with the pretherapy complaint of hoarseness, acoustic measurements of jitter, shimmer, habitual frequency, and frequency range all showed significant improvement. **CONCLUSIONS:** We conclude that in patients with symptomatic reflux laryngitis, standardized videolaryngoscopy and, if the patient is hoarse, acoustic analysis are useful techniques to aid diagnosis and monitor therapy. Antireflux therapy with omeprazole is effective, and improvement can be objectively shown with the techniques described. Author.